REMARKS

Claims 1-26 are pending in this application. Claims 10-17 have been withdrawn from consideration.

Applicant is pleased to note the Examiner indicated that claims 21 and 26 are allowed.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 2, and 4-7 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ishii *et al.* (U.S. Pat. No. 5,698,036) in view of Orezyk *et al.* (US Pat. No. 5,937,323). The Applicant respectfully traverses this rejection for at least the following reasons.

The Examiner admits that Ishii *et al.* fails to teach heating and cooling at least one of the slot electrode and component parts including the wavelength reducing member. The Examiner, however, contends that Orezyk *et al.* teaches a temperature control plate including a cold plate 24 and heater plate 23 which are provided on dome 14 (dielectric) and the top coil 29 to control the temperature of the dome at a specific range and thus it would have been obvious to one of skill in the art to provide the slot electrode and wavelength reducing member of Ishii *et al.* with the temperature control plate as taught by Orezyk *et al.* Applicant respectfully disagrees.

As conceded by the Examiner, Ishii *et al.* fails to teach heating and cooling at least one of the slot electrode and component parts including the wavelength reducing member.

With regard to Orezyk *et al.*, this reference merely teaches a plasma vapor deposition system 10 including a chamber 13 which has a dome 14 (dielectric). A heater plate 23 and a cold plate 24 surmount and are thermally coupled to dome 14 to control the dome temperature (see, col. 4, line 66 to col. 5, line 2). Orezyk *et al.*, however, does not disclose, teach or suggest a slot electrode or a wavelength reducing member much less a temperature control device constructed and arranged to control a temperature of at least one of the slot electrode and component parts including the wavelength reducing member provided in the vicinity of the slot electrode. The top coil 29 of Orezyk *et al.* is not equivalent to the slot electrode recited in claim 1 or to a "component part" provided in the vicinity of the slot electrode. The apparatus of Orezyk *et al.* does not have a slot electrode. Indeed, the slot electrode recited in claim 1 is provided to guide the microwave exiting the wavelength

reducing member. Moreover, Orezyk *et al.* merely controls the temperature of the dome to allow performing cleaning or etching processes at high temperature or to reduce flake or particle counts in the chamber. There is no suggestion in Orezyk *et al.* that controlling the temperature of the dome allows to eliminate influence of water on a substrate during processing. Therefore, there is no suggestion in either Orezyk *et al.* or in Ishii *et al.* to provide the slot electrode and wavelength reducing member with the heater plate 23 and cold plate 24 of Orezyk *et al.*

In addition, there is no motivation to replace the cooling fins of Ishii *et al.* with the heater plate and cold plate of Orezyk *et al.* because in Ishii *et al.* the cooling fins 84 are merely used to cool the flat antenna member 44 "to prevent the flat antenna from deteriorating" and in Orezyk *et al.* the heater plate 23 and cold plate 24 are provided for a different purpose (for etching or to reduce flake particles in the chamber) by maintaining the dome temperature at a higher temperature (see col. 5, lines 1-9 in Orezyk *et al.*). Whereas, the first temperature controller recited in claim 1, maintains the temperature above a lower temperature limit which allows, for example, to eliminate influence of water on a substrate during processing (see, for example, page 4 of the specification).

Consequently, neither Ishii *et al.* nor Orezyk *et al.* disclose, teach or suggest, alone or in combination, a first temperature control device constructed and arranged to control a temperature of at least one of the slot electrode and component parts including the wavelength reducing member provided in the vicinity of the slot electrode within a predetermined range of temperatures by heating at least one of the slot electrode and component parts including the wavelength reducing member above a lower temperature limit and cooling at least one of the slot electrode and component parts including the wavelength reducing member below a higher temperature limit.

Therefore, the Applicant respectfully submits that claim 1, and claims 2, 4-7 which are dependent therefrom, are patentable and respectfully requests that the § 103(a) rejection of claims 1, 2 and 4-7 be withdrawn.

Claim 3 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ishii *et al.* in view of Orezyk *et al.* The Applicant respectfully traverses this rejection for at least the following reasons.

Claim 3 is indirectly dependent from patentable claim 1. Therefore, for at least the reasons provided above in claim 1, Applicant respectfully submits that claim 3 is patentable. Moreover, contrary to Examiner's contention, Applicant submits that discovering the

temperature range (between 60°C and 80°C) is not obvious because neither Ishii *et al.* nor Orezyk *et al.* disclose, teach or suggest a temperature range between 60°C and 80°C. Indeed, Ishii *et al.* merely teaches cooling the flat antenna to prevent deterioration of the flat antenna and Orezyk *et al.* controls the dome temperature for completely different reasons, i.e., for cleaning and etching or reducing flake or particle counts. In fact, Orezyk *et al.* controls the dome temperature in a range of temperatures (between 100°C to 200°C) which is outside the range of temperatures claimed in claim 3. Thus, Orezyk *et al.* teaches away from the claimed temperature range of between 60°C and 80°C. There is no suggestion in Orezyk *et al.* to control the temperature in the temperature range between 60°C and 80°C because Orezyk *et al.* specifically teaches controlling the temperature range between 100°C to 200°C for a completely different purpose. Thus, one of ordinary skill in the art would not have been motivated to control the temperature of the dome Orezyk *et al.* in a lower temperature range. Consequently, neither Ishii *et al.* nor Orezyk *et al.* disclose, teach or suggest, alone or in combination, the subject matter recited in claim 3.

Therefore, the Applicant respectfully submits that claim 3 is patentable and respectfully requests that the § 103(a) rejection of claim 3 be withdrawn.

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Claims 8 and 9 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ishii *et al.* in view of Orezyk *et al.* as applied to claims 1, 2, and 4-7 above, and further in view of Trow *et al.* (US pat. No. 5,824,607). The Applicant respectfully traverses this rejection for at least the following reasons.

Claims 8 and 9 are directly or indirectly dependent from patentable claim 1. Therefore, for at least the reasons provided above in claim 1, Applicant respectfully submits that claims 8 and 9 are patentable. Thus, Applicant respectfully requests that the § 103(a) rejection of claims 8 and 9 be withdrawn.

Claims 18-20 and 22 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ishii *et al.* in view of Orezyk *et al.* as applied to claims 1, 2 and 4-7 above, and further in view of Fujimoto *et al.* (Japanese Patent Publication 01-072526). The Applicant respectfully traverses this rejection for at least the following reasons.

Claims 18-20 and 22 are dependent directly or indirectly from patentable claim 1. Therefore, for at least the reasons provided above in claim 1, Applicant respectfully submits

that claims 18-20 and 22 are patentable. Thus, Applicant respectfully requests that the § 103(a) rejection of claims 18-20 and 22 be withdrawn.

Claims 23-25 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ishii *et al.* in view of Orezyk *et al.* and further in view of Shirasago *et al.* (Japanese Patent Publication 02-197575) and Trow *et al.*(US. Patent No. 5,824,036). The Applicant respectfully traverses this rejection for at least the following reasons.

Claims 23-25 are dependent directly or indirectly from patentable claim 1. Therefore, for at least the reasons provided above in claim 1, Applicant respectfully submits that claims 23-25 are patentable.

Moreover, the Examiner concedes that Ishii *et al.* in view of Orezyk *et al.* fails to teach a fluid controller with a fluid flowing to a temperature control plate. The Examiner contends that Shirasago *et al.* teaches an electrode 110 provided with a pipe 1102 for flowing a fluid. The temperature of the fluid is measured using thermocouple 1101 and controlled by a temperature controller 1103. A feeder 1104 (mass flow controller and stop valve) regulates the feed rate of the fluid inside the pipe. Moreover, the Examiner contends that Trow *et al.* teaches that it is well known to supply a fluid to a dielectric material member 17W, 17T (temperature control plate). Thus, it would have been obvious to one of ordinary skill in the art to provide the temperature control plate of Ishii *et al.* in view of Orezyk *et al.* with the fluid controller as taught by Shirasago *et al.* or to provide the temperature control plate of Ishii *et al.* in view of Orezyk *et al.* with the temperature control plate as taught by Trow *et al.* The Applicant respectfully disagrees.

Shirasago *et al.* merely shows a pipe 1102 wound in spiral conformation inside hollow electrode 110 (electrode 110 has a cylindrical shape, see the Figures in Shirasago *et al.*). The electrode 110 in Shirasago *et al.* is not a plate. Therefore, Shirasago *et al.* teaches away from cooling an electrode plate. Thus, there is no suggestion in Shirasago *et al.* to control the temperature of a plate conformation. One of ordinary skill in the art would not have been motivated to combine the teachings of Shirasago *et al.* with the antenna member 44 of Ishii *et al.* or the cold plate 24 and heater plate 23 of Orezyk *et al.*

Trow *et al.* merely teaches that the chamber wall or the dome wall 17W and the dome top 17T can be heated and or cooled by circulating a liquid or gas heat transfer medium through passages formed in the chamber components 90, 92, 94 and 96. Trow *et al.*, however, does not disclose, teach or suggest controlling the temperature of a slot electrode and/or a wavelength reducing member. The apparatus of Trow *et al.* does not have a slot

electrode or a wavelength reducing member. Furthermore, there is no suggestion or motivation in Trow *et al.* to replace the cold plate 24 and heater plate 23 of Orezyk *et al.* with the cooling system of Trow *et al.*

Consequently, Ishii *et al.*, Orezyk *et al.*, Shirasago *et al.* and Trow *et al.* do not disclose, teach or suggest, alone or in combination, the subject matter recited in claim 23.

Therefore, the Applicant respectfully submits that claims 23 and 24-25 which are dependent therefrom are patentable. Thus Applicant respectfully requests that the § 103(a) rejection of claims 23-25 be withdrawn.

CONCLUSION

In view of the foregoing, the claims are now in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to contact the undersigned at the telephone number listed below.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

Pillsbury Winthrop LLP

By: _____

Glenn J. Perry
Reg. No.: 28,458
Tel. No.: (703) 905-2161
Fax No.: (703) 905-2500

GJP/KXG

00909
P.O. BOX 10500
McLean, VA 22102
(703) 905-2000